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ABSTRACT

Student perceptions of the effectiveness of three state universities was studied: Arizona State University, University of Arizona, and Northern Arizona University. An operational definition of effectiveness was proposed based on the literature, and a list of organizational activities was validated by administrators, faculty, community representatives, and students. Students' perceptions of the relative importance of organizational activities and their perceived level of achievement were identified using the 66-item survey. Principal axis factor analysis and varimax rotation were used to identify domains of effectiveness, and an indicator of effectiveness was developed. Comparative profiles of effectiveness across domains was constructed for the three universities, and the results were interpreted within the context of the strategic choice framework. Ten factors or activity domains were found: programs and services for students, emphasis on minorities and women, quality of research and teaching, research and knowledge dissemination, workshops and counseling to broaden access, athletics, supporting cultural activites, offering graduate programs, leasing facilities, and increasing standards. The 66 activitier are identified under the appropriate domain. Findings are compared to results of other research. A 19-item bibliography concludes the document. (SW)

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STUDENT PERCEPTIONS OF UNIVERSITY EFFECTIVENESS

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Students are a strategic constituency for colleges and universities because they control a scarce and valued resource by their decision to attend or not attend a particular college or university. The effectiveness literature represents one tool for assessing outcomes and establishing direction within the context of strategic management (Cope, 1981). Several researchers have suggested the need for a "fine-grained analysis" of a part of the effectiveness construct (Weick, 1976; Cameron, 1978, 1981). This study provided such an analysis by addressing the following three objectives:

(1) Proposing an operational definition of effectiveness grounded in the literature;

(2) Applying the definition to assess perceptions of effectiveness of three public universities by their respective student constituencies; and

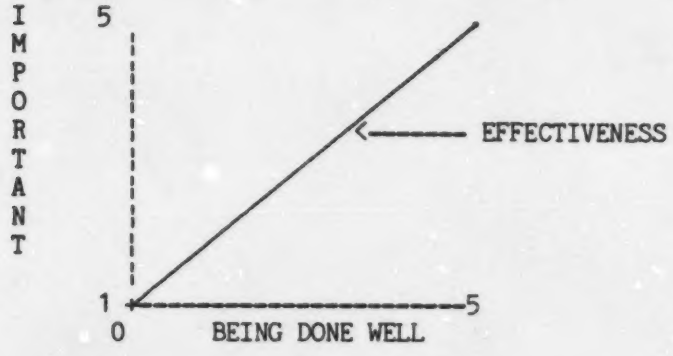
(3) Analyzing the data collected in a way to contribute to the development of theory as well as to furnish useful information to practitioners.

Conceptual Framework. This study made use of the strategic choice framework (Astley and Van de Ven, 1983) and Cameron (1978) and Cameron and Whetten's (1982) research methodology to assess the perceptions of students of the effectiveness of the state university

they were attending. The research model differed significantly from most other models proposed in the literature in that it relied on empirically derived referents in assessing effectiveness. The model acknowledged the relativism inherent in any examination of effectiveness while still allowing for comparisons across institutions.

Mapping Effectiveness: In order to implement the research, it was necessary to develop a definition of effectiveness grounded in the literature. Effectiveness was defined as the ability of the organization to minimally satisfy the expections of its strategic constituencies through successful organizational transactions (Miles, 1980, p. 375; Cameron, 1978, p. 17) or as Hage (1980, p. 136) put it, "achievement vis-a-vis priorities." This was operationalized as the congruence between the importance of an activity and its level of achievement. This is graphically displayed in the following figure.

FIGURE 1
A GRAPHIC REPRESENTATION OF THE EFFECTIVENESS CONSTRUCT



If the diagonal line represents effectiveness, the distance of any point from that line can be used as a relative measure of effectiveness. The closer to the line the more effective the activity. For ease in referring to this distance measure in the following discussion, it has been termed the Effectiveness Distance Measure (EDM). The EDM may be computed by using Pythagoras' Theorem for measuring the distance of a point from a line. The formula is:

$$X = \sqrt{\frac{(A - B)^2}{2}}$$

Translating the formula to this research, the following was developed:

$$EDM = \sqrt{\frac{(\text{IMPORTANT} - \text{DONE WELL})^2}{2}}$$

Method: Using the methodology of Richardson, Doucette, and Armenta (1982), a 66 item survey was developed and validated. A list of activity statements was generated through a review of the literature about the organization under study. The list of activities was then validated and expanded by administrators, faculty, and community representatives. Following administration of a first survey, a second improved version was developed by the research team and validated by student leaders. The development of the surveys is further described in Richardson, Kimball, Wolf, and Kleemann (1984).

The perceptions of the relative importance of organizational activities and their perceived level of achievement was determined by surveying students. Responses were subjected to a principal axis factor analysis followed by varimax rotation to identify domains of effectiveness. Descriptive statistics were also generated.

An indicator of effectiveness (the EDM) was then developed by analyzing the congruence between perceptions of importance and perceptions of achievement.

Finally the results were interpreted within the context of the strategic choice framework by constructing comparative profiles of effectiveness across domains for the three universities.

Survey Instrument: The development of the survey instrument, modeled after Doucette's (1983) study of college missions, was characterized

by an interaction between a priori and empirical activities, but the emphasis was on the latter. By focusing on activities, it was possible to overcome many of the problems reported in other studies in the generation of criteria for measuring effectiveness (value judgements, stated versus unstated goals, goal dissensus).

The first version of the instrument was developed during the summer of 1982 based on the literature on organizational effectiveness and the literature on missions research. Additionally, the Arizona Board of Regents mission statements for the three Arizona state universities, several college catalogs, the activity statements (but not the process statements) of the Institutional Goals Inventory (Peterson and Uhl, 1975), and the Community College Activity Survey (CCAS) (Richardson, Doucette, and Armenta, 1982), were reveiwed to develop a comprehensive list of activity statements. Following its initial administration, a second improved version was developed in early 1983.

Survey Administration: The instrument was administered during the Spring semester, 1983, to a sample of students at the three state universities in Arizona following standard survey procedures. At Arizona State University 1,428 students of 1,874 enrolled in a random sample of 52 classes completed questionnaires for a response rate of 76.2%. The majority of those not responding were students who were officially on the enrollment rolls but absent from the classroom at the time the survey was administered. Less than 10 students refused

to participate in the survey.

At the University of Arizona, 50 randomly chosen classes were surveyed. 1,001 or 55% of the 1,820 students provided usable responses. Instructors in five of the 50 classes did not permit administration of the survey.

At Northern Arizona University, 41 of 50 randomly selected classes were surveyed yielding responses from 880 or 59.6% of the 1,476 students enrolled.

Defining Activity Domains: Responses were subjected to a principal axis factor analysis followed by varimax rotation to identify domains of organizational activity. This analysis produced ten factors or activity domain categories into which 54 of the 66 statements describing specific university activities were distributed. (Table 1 lists the items and their factor loading scores.)

Table 1
CHART OF FACTOR LOADINGS
10 FACTOR SOLUTION

		FACTOR LOADINGS
Activity Domain 1: Programs and Services for Students		
Item 32	Career and placement services	.58
Item 20	Provide information to students	.56
Item 33	Adequate study space	.55
Item 22	Financial assistance services	.54
Item 65	Academic advising	.51
Item 47	Orientation programs for students	.42
Item 11	Counseling for students	.41
Item 52	Medical care for students	.40
Item 51	Assist handicapped	.40
Item 41	Sponsor student government	.36
Item 40	Provide instructor evaluations	.34
Item 17	Involve students in important decisions	.32
Item 2	Remove poor teachers	.32
Item 14	Provide transcripts with honors indicated	.31
Item 7	Offer undergraduate degree programs	.31
Item 36	Offer small classes	.30
Activity Domain 2: Emphasizing Minorities and Women		
Item 49	Recruit minority faculty	.78
Item 23	Recruit minorities	.78
Item 66	Tutoring for minorities	.74
Item 18	Conduct research for minorities	.71
Item 54	Information on minorities - degree	.66
Item 31	Recruit and retain women faculty	.52
Item 13	Accept international students	.34
Activity Domain 3: Quality of Research and Teaching		
Item 44	Reward good research	.65
Item 38	Sponsor research - keep quality faculty	.52
Item 42	Provide quality labs	.49
Item 34	Reward good teaching	.46
Item 56	Recruit scholars & researchers	.44
Item 46	Provide library resources and services	.33

Table 1 (Continued)
CHART OF FACTOR LOADINGS
10 FACTOR SOLUTION

Activity Domain 4: Research and Knowledge Dissemination		
Item 12	Conduct research	.53
Item 4	Conduct contract research	.52
Item 8	Short courses - use research	.42
Item 9	Publish books	.40
Item 15	Computer literacy	.31
Item 3	Provide leadership training	.30
Item 6	Operate public TV stations	.30
Activity Domain 5: Workshops and Counseling to Broaden Access		
Item 59	Offer workshops - study skills	.49
Item 48	Offer workshops -health, recreation, hobbies	.42
Item 58	Provide pregnancy counseling & health svcs.	.42
Item 15	Include computer literacy in degree programs	.31
Item 43	Offer courses by telecommunication, etc.	.30
Item 39	Offer remedial instruction	.30
Activity Domain 6: Athletics		
Item 21	Sponsor intercollegiate athletics	.74
Item 64	Recruit athletes	.60
Item 35	Sponsor intramurals	.51
Activity Domain 7: Support Cultural Activities		
Item 26	Sponsor art events, performances, etc.	.55
Item 1	Sponsor films, exhibitions, productions, etc.	.43
Activity Domain 8: Offer Graduate Programs		
Item 63	Offer graduate programs - humanities	.55
Item 60	Offer graduate programs - professional	.43
Item 62	Develop professional graduate programs	.39

Table 1 (Continued)
CHART OF FACTOR LOADINGS
10 FACTOR SOLUTION

Activity Domain 9: Leasing Facilities		
Item 10	Lease facilities for profit	.52
Item 16	Non-profit use of facilities	.46
Activity Domain 10: Increasing Standards		
Item 57	Limit enrollment	.38
Item 27	Require writing test to graduate	.32

Each set of activity statements comprising an activity domain was arranged in order of decreasing contribution to the category as measured by factor loading scores. Each group of statements was then examined for common activities, common clientele or common rationale in that order. If the literal commonality of the statements was obvious, this was expressed in a brief phrase. In cases where the commonality was apparent in some of the activities, but less so in others, those activities that received the highest factor loadings were given greater weight in determining the description. The ten domains identified were:

1. Programs and Services for Students
2. Emphasizing Minorities and Women
3. Quality of Research and Teaching
4. Research and Knowledge Dissemination
5. Workshops and Counseling to Broaden Access
6. Athletics

7. Sponsoring Cultural Activities
8. Offering Graduate Programs
9. Leasing Facilities
10. Increasing Standards

The selection of appropriate referents for assessing effectiveness has been a major challenge to researchers studying the performance of organizations (Campbell, et al., 1974; Cameron and Whetten, 1982). Table 2 compares the domains yielded by this study with referents used by the Institutional Goals Inventory (Peterson and Uhl, 1975) and the nine dimensions identified by Cameron (1978).

Table 2

Comparison of IGI Referents, Cameron's Referents, and Activity Domain Referents

IGI Referents	Activity Domain Referents	Cameron's Referents
1. Academic development.	1. Programs and services for students.	1. Student educational satisfaction.
2. Intellectual orientation.	2. Emphasizing minorities and women.	2. Student academic development.
3. Individual personal development.	3. Quality of research and teaching.	3. Student career development.
4. Humanism/altruism.	4. Research and knowledge dissemination.	4. Student personal development.
5. Cultural/ aesthetic awareness	5. Offering workshops and counseling.	5. Faculty and administrator employment satisfaction.
6. Traditional religiousness.	6. Athletics.	6. Professional development and quality of the faculty.
7. Vocational preparation.	7. Sponsoring cultural activities.	7. System openness and community interaction.
8. Advanced training.	8. Offering graduate programs	8. Ability to acquire resources.
9. Research.	9. Leasing facilities.	9. Organizational health.
10. Meeting local needs.	10. Increasing standards.	
11. Public service.		
12. Social egalitarianism.		
13. Social criticism/activism		

There are similarities between the different sets of referents. The first four of Cameron's referents -- Student Educational Satisfaction, Student Academic Development, Student Career Development, and Student Personal Development -- encompass activities included in domain 1, Programs and Services for Students. Cameron's Professional Development and Quality of the Faculty referent is similar to Quality of Research and Teaching. Sponsoring Cultural Activities implies many of the same activities as Cameron's System Openness and Community Interaction referent. Domain 9, Leasing Facilities is a specific application of Cameron's Ability to Acquire Resources referent. The IGI referent Research suggests activities similar to domain 4, Research and Knowledge Dissemination.

Despite these similarities the operational domains identified in this study are different from the descriptions found in college catalogs and other official documents and the general categories of domains discussed in the effectiveness and higher education literature. A major problem in effectiveness studies has been the generation of orthogonal referents. The literature is clear that it is not so important what referents are chosen as it is that they be clearly recognized and specified (Cameron and Whetten, 1982). This study generated empically derived orthogonal referents that were different from those described in other studies primarily in their degree of specificity.

Assessing Effectiveness: Means and standard deviations were calculated for each activity domain on both the "Important To Do" and "Being Done Well" dimensions. The priority assigned by students to each domain was determined by rank ordering means of the "Important to Do" responses. Similarly, perceptions of mean levels of accomplishment were determined by rank ordering the means of the "Being Done Well" responses.

Table 3 lists the means and ranks for Importance, Done Well and the Effectiveness Distance Measures (EDM) for the ten domains as perceived by the three student bodies.

INSERT TABLE 3 ABOUT HERE

The Effectiveness Distance Measure (EDM) for each of the ten domains at each university was computed and charted to display an effectiveness profile for each school. Figure 2 displays the effectiveness profiles for the ten domains of the three universities.

INSERT FIGURE 2 ABOUT HERE

Arizona State University students perceived activities relating to academic concern (domains 1, 3, 4 and 8) and to the quality of student life (domains 1, 5 and 7) as most important. With the exception of domain 7, Sponsoring Cultural Activities, these domains were ranked as the least effective, ranking fifth, sixth, seventh, eighth and tenth.

Table 3

Means and ranks for Importance, Done Well, and EDM

	ASU STUDENTS						UA STUDENTS						NAU STUDENTS					
DOMAINS	IMPORTANCE		DONE WELL		EDM		IMPORTANCE		DONE WELL		EDM		IMPORTANCE		DONE WELL		EDM	
	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK
1	4.34	2	3.00	8	0.96	10	4.31	2	3.14	6	0.84	8	4.33	1	3.13	3	0.88	7
2	3.41	9	3.05	7	0.59	3	3.45	9	3.07	7	0.62	3	3.30	9	3.09	4	0.53	2
3	4.24	3	3.12	6	0.82	8	4.32	1	3.18	5	0.84	7	4.16	3	2.93	7	0.90	9
4	4.15	5	3.13	5	0.75	5	4.18	4	3.31	4	0.67	4	4.05	5	2.87	9	0.88	8
5	3.92	6	2.88	9	0.78	6	3.93	6	2.98	8	0.74	6	3.94	6	2.88	8	0.81	6
6	3.75	8	3.64	1	0.48	1	3.65	8	3.50	1	0.52	1	3.73	8	3.43	1	0.52	1
7	4.21	4	3.58	2	0.59	2	4.18	5	3.48	2	0.60	2	4.14	4	3.38	2	0.65	3
8	4.35	1	3.27	3	0.80	7	4.30	3	3.38	3	0.72	5	4.24	2	2.93	6	0.95	10
9	3.78	7	3.14	4	0.70	4	3.76	7	2.81	9	0.87	10	3.79	7	2.99	5	0.80	5
10	3.40	10	2.71	10	0.85	9	3.44	10	2.76	10	0.84	9	3.24	10	2.74	10	0.78	4
MEAN	3.95		3.15		0.73		3.95		3.16		0.72		3.89		3.04		0.77	
S.D.	0.34		0.27		0.14		0.34		0.25		0.12		0.36		0.21		0.15	

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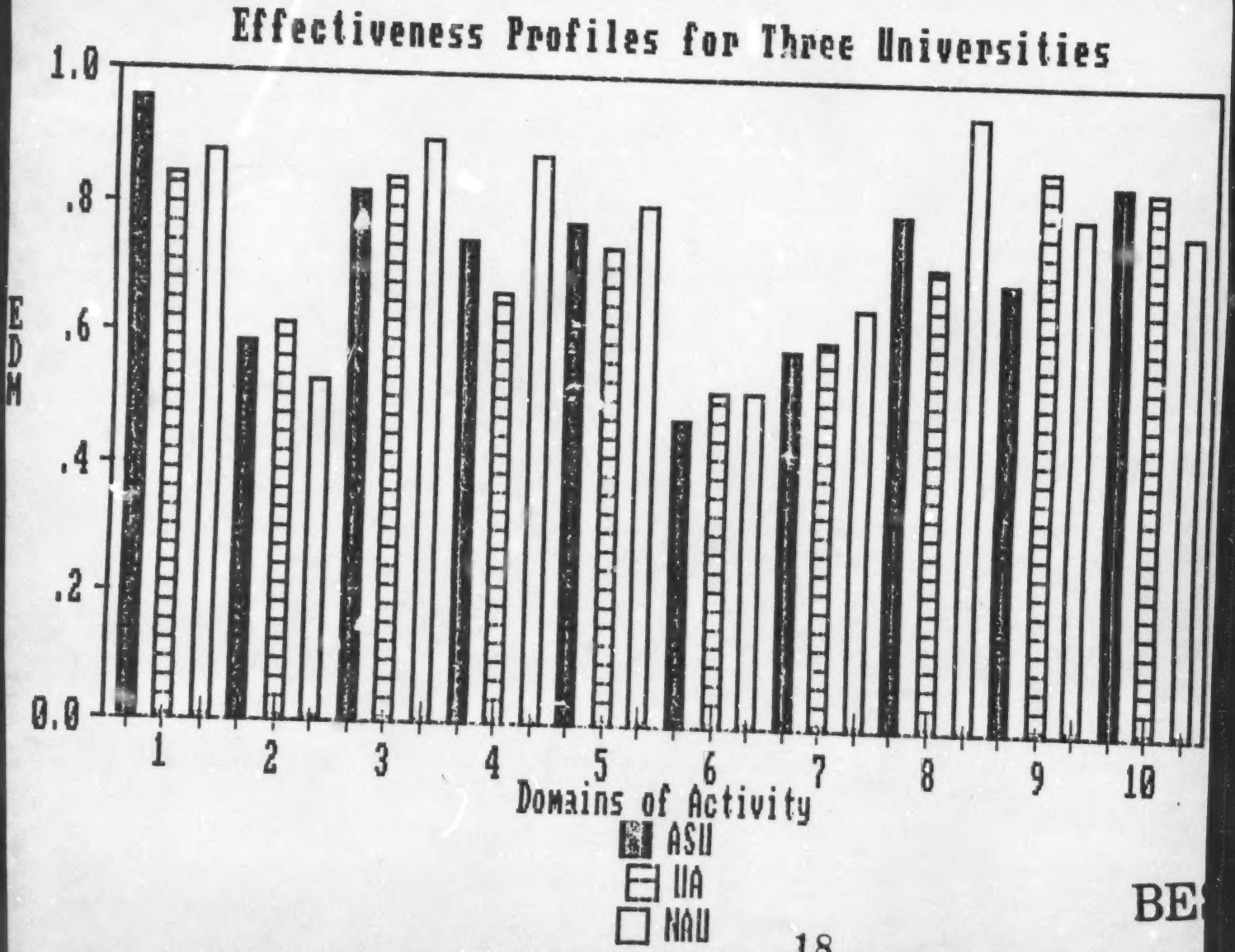
FIGURE 2


Effectiveness Profiles for Three Universities
1.0
.8
.6
.4
.2
0.0
EDM
1
2
3
4
5
6
7
8
9
10
Domains of Activity
ASU
UA
NAU

University of Arizona students perceived domains concerned with quality of academic life (domains 3, 4, and 8) and the quality of student life (domains 1 and 7) as the most important activities for the University. Two of these domains, Research and Knowledge Dissemination and Offering Graduate Programs were also rated as among the most effective by University of Arizona students. However the three domains considered to be the most effective (Athletics, Sponsoring Cultural Activities, and Emphasizing Minorities and Women) were ranked in the bottom half for importance ranking eighth, fifth, and ninth respectively.

Northern Arizona University students perceived activities concerned with academics (domain 8 - Offering Graduate Programs, domain 3 - Quality of Research and Teaching, and domain 4 - Research and Knowledge Dissemination) and activities concerned with the quality of student life (domain 1 - Programs and Services for Students and domain 7 - Sponsoring Cultural Activities) as the most important domains. Only one of these, Sponsoring Cultural Activities, was perceived by Northern Arizona University students as among the five most effective domains. The other four domains considered to be the most effective - Leasing Facilities, Athletics, Emphasizing Minorities and Women, and Increasing Standards - were ranked seventh, eighth, ninth, and tenth respectively in importance.

Many similarities were apparent in the ways the three student bodies

perceived their insitutions. All three placed a high priority on domains concerned with the quality of academic and student life. Students perceived their universities as places where academics should be very important. They also perceived the university as a place where the quality of student life should have a high priority. Although all domains were considered to be of at least some importance, relatively low priority was assigned to Emphazing Minorities and Women, Leasing Facilities, and Increasing Standards.

Athletics was perceived as the activity domain accomplished the best at all three of the institutions followed closely by Sponsoring Cultural Activities. Students perceived the Arizona universities as doing a good job in offering these areas. As might be expected, University of Arizona students rated the level of accomplishment for domains 3, 4, and 8 (Quality of Research and Teaching, Research and Knowledge Dissemination, and Offering Graduate Programs) higher than did either Arizona State University or Northern Arizona University students.

Emphasizing Minorities and Women, Athletics, and Sponsoring Cultural Activities were all perceived as effective domains at the three universities. Providing Programs and Services for Students, Quality of Research and Teaching, Offering Graduate Programs, Leasing Facilities, and Increasing Standards were domains which were generally perceived as less effective at all three institutions.

The profiles of effectiveness across the ten domains for the three universities revealed both differences and similarities in the ways that the three samples responded to the questions involving importance and quality of achievement. In part, these differences were attributable to differences among the missions and priorities of the three universities.

It is interesting to compare the official mission statements of the universities (Arizona Board of Regents, 1982) with the domains identified by the student constituency to see if the domains which are the official missions are being emphasized. Neither Athletics nor Sponsoring Cultural Activities, perceived as the most effective domains by Arizona students, appear as missions at any of the three universities (although Fine Arts is an area of emphasis at ASU). The mission differences in the three institutions with regard to the role of research were apparent in the data. Northern Arizona University students believed research should play a more important role than it is perceived as playing — clearly a discrepancy from the officially stated mission for NAU. And although Providing Programs and Services for Students was perceived as among the most important domains, language supporting student development programs was only added to the official mission statements of the universities in 1982. Emphasizing Minorities and Women was perceived as a relatively unimportant domain by traditional students while the Arizona Board of Regents has devoted considerable energy and increasing resources to

this domain recently (Richardson, Wolf, and Kimball, 1983; Richardson and Kleemann, 1983).

As shown in Figure 2, no university was perceived as doing the right things in all 10 domains. Quality means different things to different people. From the strategic choice view it means doing the "right" things in an exceptional manner. There is an important distinction between effective activities and quality activities. Activities are perceived as effective when there is a congruence between the importance of an activity and its level of achievement. Quality, in contrast, is present when both the importance and the level of achievement are high. Athletics was perceived by the three student bodies as a relatively important domain that was being done very well. Arizona universities were perceived by their student bodies to have athletic programs that were both high in quality and effective. The results of this study indicated that Arizona students generally perceived their universities as needing to improve the quality of three domains: Providing Programs and Services for Students, Quality of Research and Teaching, and Offering Graduate Programs (that is, these domains were perceived as having high importance but lower levels of accomplishment).

Conclusion

This study attempted a fine grained analysis of student perceptions of the effectiveness of three state universities to gain a better understanding of the effectiveness construct. Several researchers

(Campbell, 1977; Goodman and Pennings, 1977; Cameron, 1978; Cope, 1981; Bess, 1983) have echoed the call by Karl Weick (1976) to have more research on institutions of higher education done using the microscope instead of the telescope.

Additional research is needed to determine if there are common domains for higher education or, as seems more likely, if there are common domains for types of institutions such as community colleges, comprehensive colleges, liberal arts colleges, or research universities. The identification of a commonly used set of referents for studies of effectiveness could greatly increase the utility of the results for cross-institutional comparisons. To paraphrase Cameron, the results of this study have not produced irrefutable conclusions, but have identified some interesting areas for future research (Cameron, 1978, p. 213).

Strategic management involves doing the "right things." Assessing perceptions of effectiveness is only the first step in managing organizations in a rapidly changing and somewhat hostile environment. The second step — developing and implementing strategies to improve perceptions of effectiveness for an increasingly diverse clientele is the challenge that faces institutional leadership. Better understanding of the perceptions of strategic constituencies can help administrators to understand and influence the environment in which institutions exist and upon which they depend for resources.

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